ITS Field Operational Test Summary
TransCal Interregional Traveler Information System

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Introduction

The TransCal ITS Field Operational Test evaluates an Interregional Traveler Information System (IRTIS). The IRTIS provides coverage for the Interstate 80 and US 50 corridor between San Francisco and Tahoe/Reno-Sparks area. The IRTIS proposed to disseminate customized traveler information via telephone, personal digital assistants (PDAs), and in-vehicle navigation devices (IVDs) as well as traditional broadcast media. The primary objective of TransCal is to disseminate comprehensive, accurate, and timely pre-trip and en route traveler information to help mitigate the impacts of congestion and incidents.

The Traveler Advisory Telephone System (TATS) component of the TransCal field operational test (FOT) became unofficially operational in March 1997 and will continue until September 1998. Testing of the PDAs and IVDs continues until March 1998. The Final Evaluation Report is expected in March 1999.

Project Description

TransCal implements a comprehensive interregional traveler information system that integrates road, traffic, transit, weather, and value-added traveler services from various sources. The project demonstrates the utility of an advanced traveler information system and showcases emerging capabilities in computing, communications, and consumer electronics. Figure 1 shows the area of IRTIS operation during the field operational test.

TransCal originally included two other components. These components were an emergency notification system to test a satellite-based two-way communication system, and a Tahoe transit frequent passenger program to increase transit use in the Lake Tahoe Basin. TransCal's Management Board, however, voted to eliminate these components from the project and redirected the funds in support of the IRTIS component.

The IRTIS operates from the TransCal Traveler Information Center in Sacramento, California. It receives real-time traveler related information from existing public and private interregional sources. It processes and fuses this data with existing static and periodic data and maintains a real-time traveler information database. The system disseminates the information to travelers via wireline and cellular telephones and FM subcarrier networks. The general public can access this information via telephone and traditional broadcast media. Test personnel are evaluating accessing the information using PDAs and IVDs. The paragraphs below briefly describe these devices.

- **Personal Digital Assistants (PDAs)** - The PDAs are hand-held, portable devices that provide users with information contained in the IRTIS database. The PDAs receive dynamic information types through the FM subcarrier data broadcast system.

- **In-Vehicle Devices (IVDs)** – The IVDs provide interactive access to detailed maps and the use of an integrated GPS receiver to determine the vehicle's current location. The IVDs receive dynamic information types through the FM subcarrier data broadcast system.
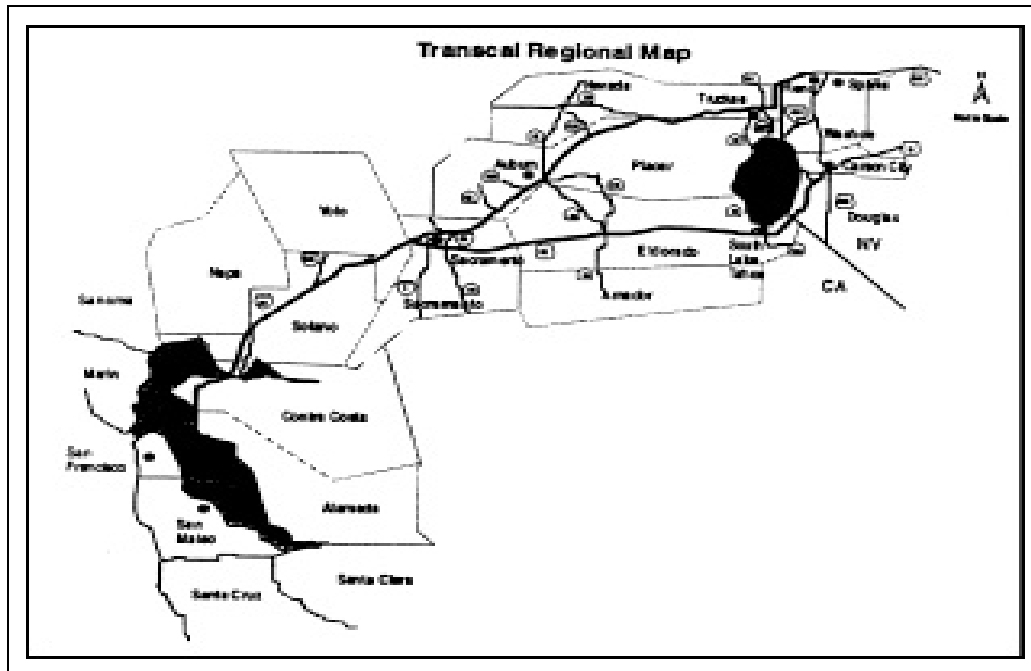
Figure 1: IRTIS Operational Test Area

The IRTIS uses three types of data definitions: static, periodic, and dynamic. Static data remains relatively constant over time and for the duration of the test. Periodic data remains relatively constant for short periods of time — on the order of weeks. Dynamic data consists of current conditions obtained as they occur. Static data may reside in the IRTIS database or within the dissemination devices themselves. Periodic and dynamic data is processed and maintained by the IRTIS computer workstations in real-time. Table 1 provides a list of data types within each data category.

Static Data Definition	Periodic Data Definition	Dynamic Data Definition
• Freeway segment definitions • Arterial segment definitions • Transit segment definitions • Transit stop locations • Major points of interest • Transit route definitions	• Transit schedule • Transit fares • Planned lane closures • Planned detours • Planned events • Airline phone numbers	• Freeway incidents • Arterial incidents • Transit incidents • Transit schedule change • Emergency maintenance • Planned event status • Regional weather status

Table 1: IRTIS Data Definitions

IRTIS consists of a data processing subsystem (IRTIS main database), a data dissemination system, and multiple end-user technologies designed to receive data from the IRTIS main database.

The data processing subsystem combines data from multiple sources to produce an integrated list of freeway and arterial incidents, emergency maintenance, planned event status, and regional weather status. The subsystem also determines the initial status of new traffic incidents and updates the current incident list as appropriate. The data processing done by the IRTIS uses the TRW Trans View advanced traveler information software. This software supports the collection, processing, and dissemination of real-time traffic and transit information. The data processing subsystem consists of computer workstations and servers on a local area network that is scaleable in size to accommodate any number of inputs and outputs. The network connects to a wide range of traveler services and products. A separate computer server acquires, processes, maintains, and disseminates the information.

The IRTIS automates the data collection process as much as possible. An IRTIS operator, however, must manually input data from some data sources. An IRTIS operator is also responsible for keeping traveler information accessible via public telephone through a voice processing system called the Traveler Advisory Telephone System. The operator makes a voice recording of any changes in traveler information based on reported changes of the current traveler information database. Travelers can access this information by calling a single telephone number.

The evaluation goals of the TransCal project include:

- Assess user acceptance from the perspective of the end-users, public partners, and private partners

- Assess benefits and costs of IRTIS

- Assess system performance of IRTIS as an integrated system and by system component

- Assess IRTIS impact on travel behavior

- Assess institutional and legal issues

Test Status

After beginning operation of the TATS component, issues pertaining to the in-vehicle device performance and proposed kiosk database quality delayed a full conduct of the test. In February 1998, the test partners decided to end test operations. The partners will finish testing the PDAs and IVDs by the end of March 1998. The TATS will remain operational until September 1998 using state funds. The test will redirect the existing evaluation efforts to focus on capturing the institutional and technical lessons learned during the course of the test. The evaluator will prepare a final report by the end of March 1999.

Test Partners

California Department of Transportation

California Highway Patrol (CHP)

Federal Highway Administration

Metropolitan Transportation Commission (MTC)

Nevada Department of Transportation

Nevada Highway Patrol (NHP)

RTCWC

Sacramento Council of Government (SACOG)

Sierra Counties Consortium

Tahoe Trans District

TRW

References

None published.